MINICOM
ADVANCED SYSTEMS

CAT5 Smart KVM Extender

User Guide

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Welcome to the Smart Extender system

The Smart Extender system is produced by Minicom Advanced Systems Limited.

Technical precautions

This equipment generates radio frequency energy and if not installed in accordance with the manufacturer's instructions, may cause radio frequency interference.

This equipment complies with Part 15, Subpart J of the FCC rules for a Class A computing device. This equipment also complies with the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. These above rules are designed to provide reasonable protection against such interference when operating the equipment in a commercial environment. If operation of this equipment in a residential area causes radio frequency interference, the user, and not Minicom Advanced Systems Limited, will be responsible.

Changes or modifications made to this equipment not expressly approved by Minicom Advanced Systems Limited could void the user's authority to operate the equipment.

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1. What is the CAT5 Smart KVM Extender system?

The CAT5 Smart KVM Extender system from Minicom is an advanced KVM switch that performs the following functions:

- Extends KVM control over a computer* up to a distance of 110m / 360ft
- Gives 2 users at 2 workstations control of 1 computer*
- A 2-port KVM Switch for 1 or 2 users

* Wherever the word 'computer' appears in this guide it can equally refer to a KVM switch.

2. The system components

The Smart KVM Extender system consists of the following:

- Transmitter
- Receiver
- 3 in 1 CPU cable
- 1 Power adapter for the Receiver

A Shielded CAT5 FTP (Foil Shielded Twisted Pair) Solid Wire 2x4x24 AWG cable terminated with RJ-45M connectors connects the Smart KVM Extender system. The Receiver can be up to 110m/360ft away from the Transmitter.

This Guide illustrates the Smart KVM Extender system and explains how to install and operate it.

3. The Smart KVM Extender units

The figures below illustrate the Transmitter and Receiver units.

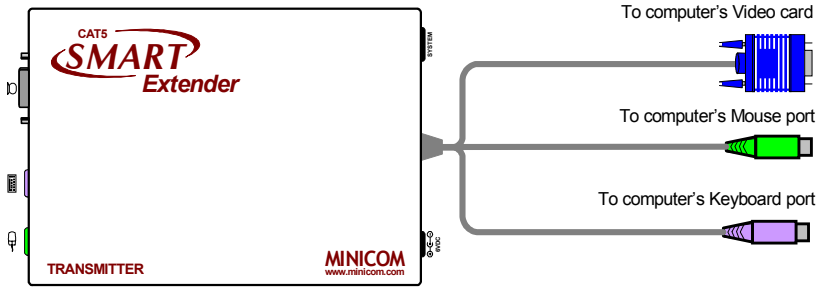


Figure 1 Transmitter bird's-eye view

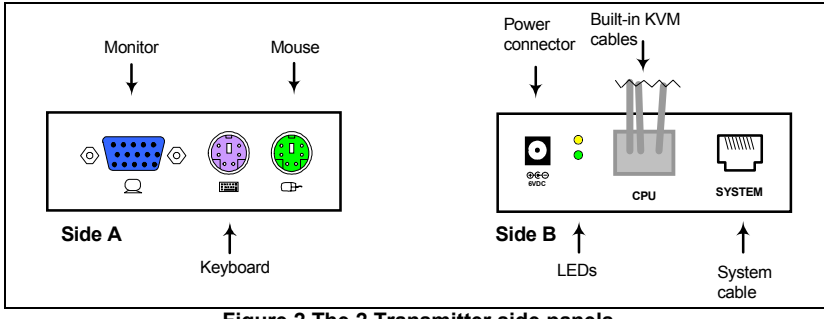


Figure 2 The 2 Transmitter side panels

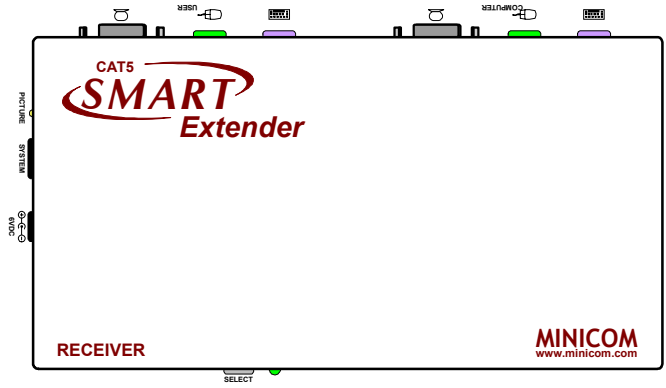


Figure 3 Receiver bird's-eye view

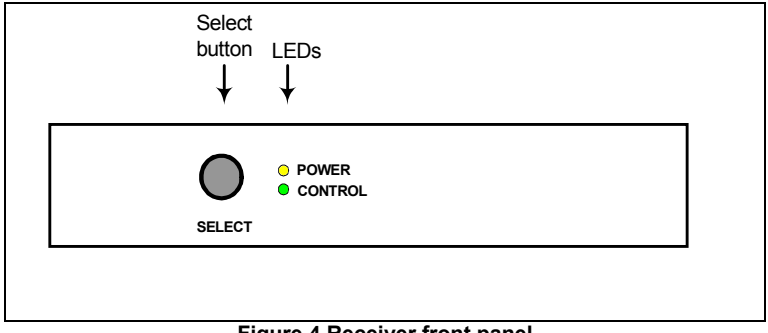


Figure 4 Receiver front panel

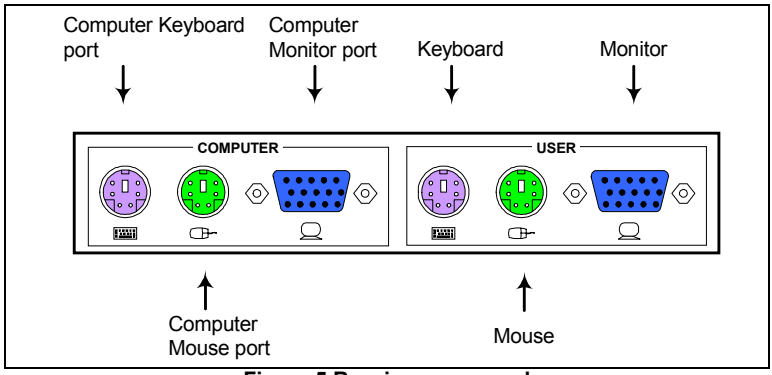


Figure 5 Receiver rear panel

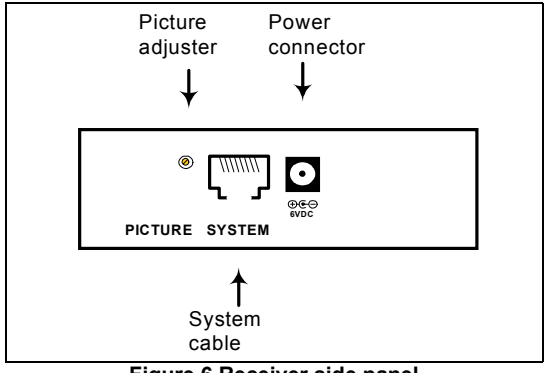


Figure 6 Receiver side panel

4. Pre-installation instructions

Disconnect all computers from the electrical power supply.

Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise.

5. The Smart KVM Extender cables

The Transmitter comes with built-in KVM cables that connect to the computer's Video card, Mouse and Keyboard ports.

The 3 in 1 CPU cable

The 3 in 1 CPU cable –illustrated below – is only used when the Receiver connects to a computer. The cable connects to the Computer section of the Receiver rear panel, see Figure 5.

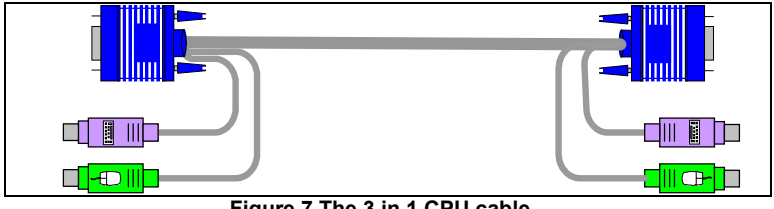


Figure 7 The 3 in 1 CPU cable

6. Using the Smart KVM Extender as an Extender

Connect the system as in Figure 8 to use the Smart KVM Extender as an Extender. Extend the KVM workstation from the computer up to a distance of 110m/360ft. Connect the system as described below.

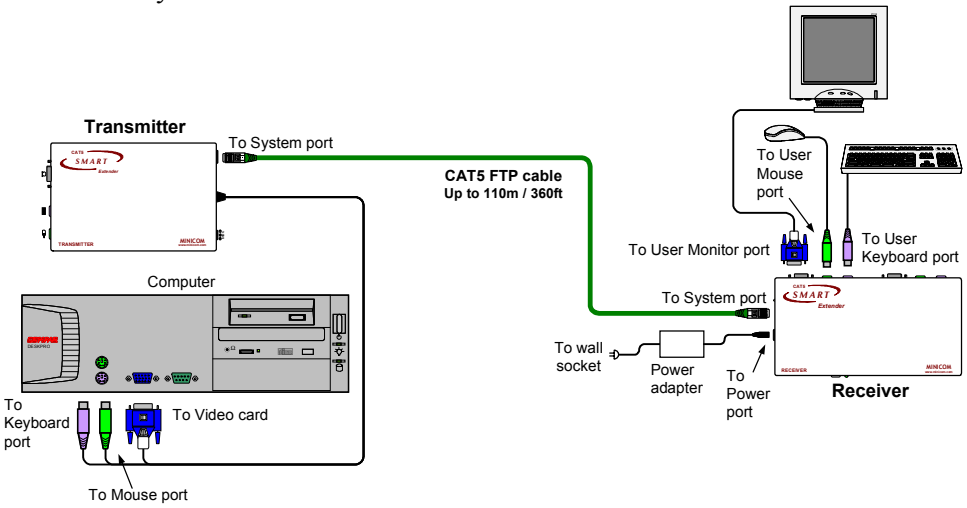


Figure 8 The Smart KVM Extender as an Extender

Connecting the Transmitter

Connect the Transmitter built-in cables to the computer as follows:

Connect the purple Mouse connector to the computer's mouse port.

Connect the green Keyboard connector to the computer's Keyboard port.

Connect the blue Video connector to the computer's Video card.

Connecting the CAT FTP System cable

Connect the CAT FTP System cable to the System ports of the 2 Smart extender units.

Connecting the Receiver

Connect a monitor, keyboard and mouse to the User ports on the Receiver's rear panel.

7. Power supply

Connect the Receiver to the power supply with the Power adapter and Power cord provided. The Transmitter receives it power from the connected computer and does not generally need an external power supply. When cascading Extenders the Transmitter does need an external power supply. See page 19.

8. Using the Smart KVM Extender to give 2 users access to 1 computer

Connect the system as in Figure 9 to give 2 users access to 1 computer on a first-come-first-served basis. The connections are the same as in Figure 8, with the addition of a KVM workstation for user 2. Connect the workstation for user 2 as described below.

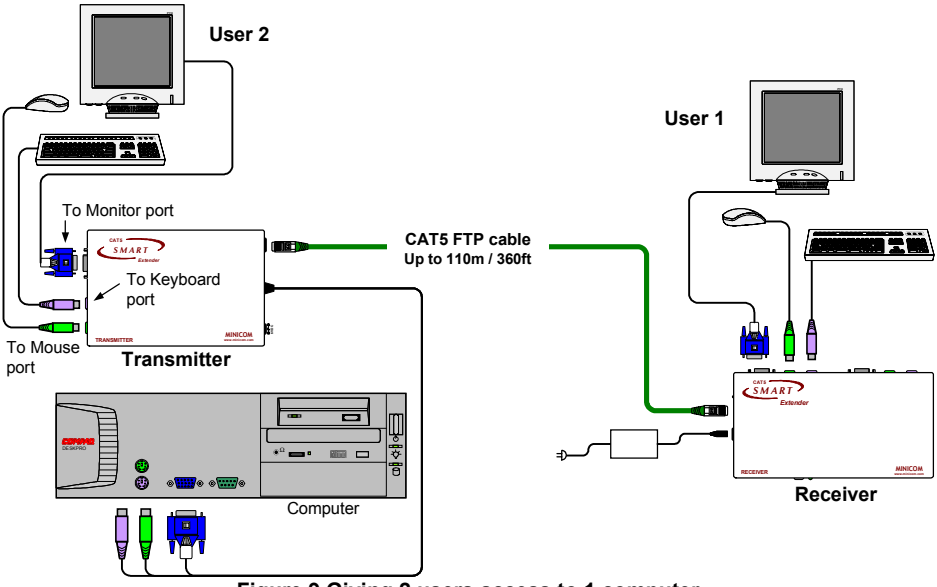


Figure 9 Giving 2 users access to 1 computer

Connecting the KVM workstation for user 2

Connect a monitor, keyboard and mouse to the ports on the Transmitter's side panel.

9. Using the Smart KVM Extender as a 2-port KVM Switch

Figure 10 illustrates the system connected to 2 computers and 2 workstations. User 1 can access his local computer or the remote computer. User 2 can only access his local computer. The connections are the same as in Figure 9, with the addition of the 3 in 1 CPU cable that connects a 2nd computer to the Receiver.

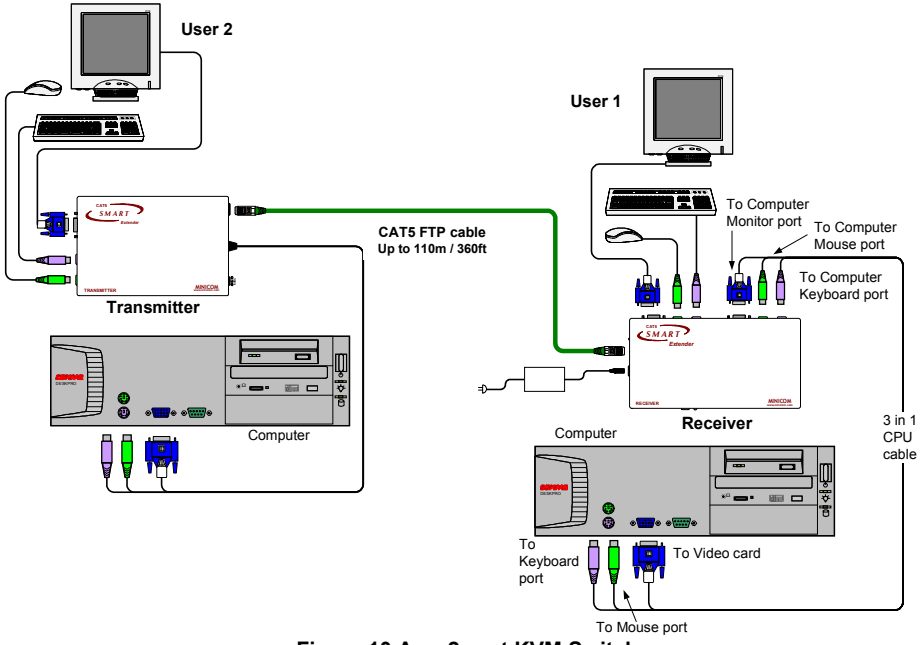


Figure 10 As a 2-port KVM Switch

The option in Figure 10 can also work with only 1 user workstation connected at the Receiver.

10. Smart KVM Extender connected to a KVM Switch and computer rack

In Figure 11 user 1 can access a computer rack through a KVM Switch or the local computer. User 2 can access the computer rack. To connect the KVM Switch to the computers see the KVM Switch User Guide.

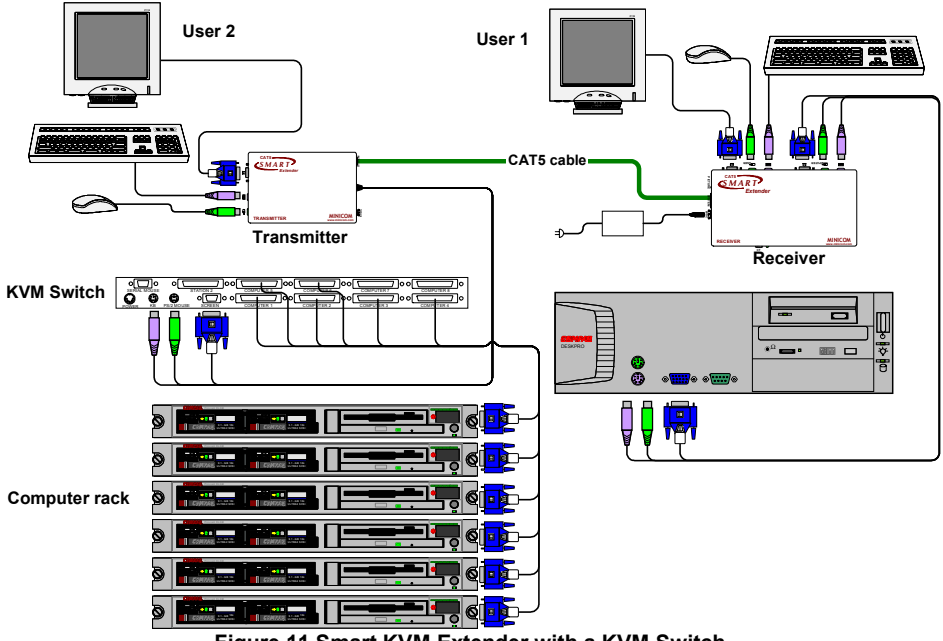


Figure 11 Smart KVM Extender with a KVM Switch.

11. Smart KVM Extender connected to 2 Phantom systems

In Figure 12 two users have access to two Phantom systems. User 1 has access to both systems while user 2 can access only the Phantom system he's connected to. To connect the Phantom systems to the computers see the Phantom User Guide.

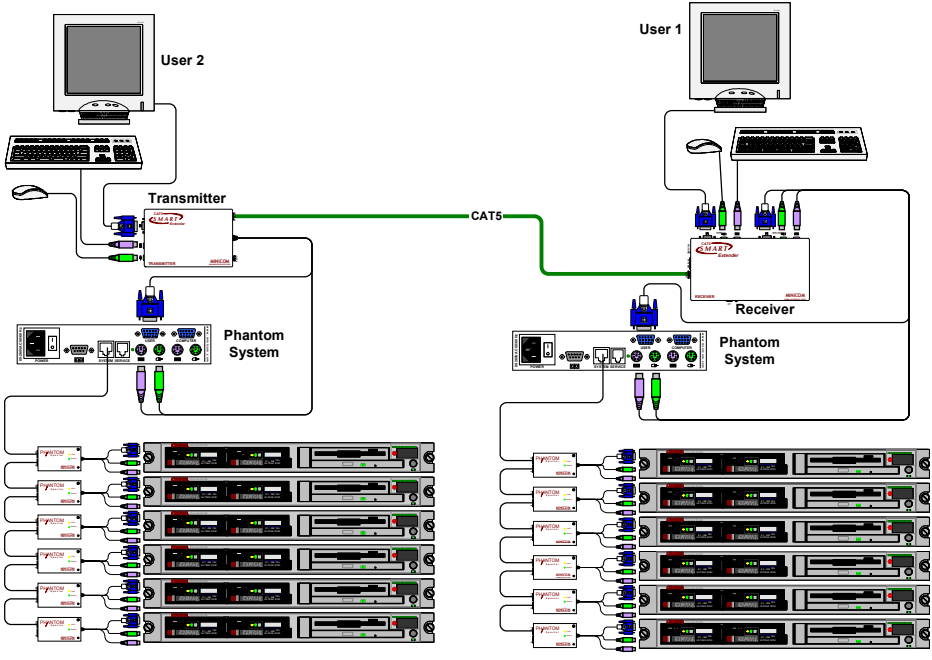


Figure 12 Smart KVM Extender connected to 2 Phantom systems

12. Operating the Smart KVM Extender

Once the system is connected there are 2 ways to switch between the 2 computers / KVM workstations.

- On the Receiver press the Select button

Or

- On the keyboard press **Shift** followed by + or -.

The Receiver Control LED

Status	Meaning
Off	User at Receiver working on Receiver computer
On	User at Receiver working on Transmitter computer
Blinking	User at Transmitter working on Transmitter computer

The Transmitter Control LED

Status	Meaning
Blinking	User at Receiver working on Transmitter computer
Off	Any other situation

Adjusting the picture

When the Receiver has control of the Transmitter's computer, adjust the picture quality where necessary using a small flat screwdriver to turn the Picture adjuster located on the Receiver's rear panel. See Figure 6.

Timeout

When there are 2 workstations in the system you can gain control at each workstation when the other workstation is idle for 2 seconds. This timeout period can be altered in the settings mode to between 1-99 seconds, as explained below.

Locking KVM control

When there are 2 users using the system, either user can override the Timeout feature and retain control indefinitely. Do so by locking the system so that only one user has control.

To lock control:

On the keyboard press **Shift** followed by **F12**.

To relinquish control:

On the keyboard press **Shift** followed by **Esc**.

In the settings mode you can disable the lock control function. This is explained in the Settings mode paragraph below.

13. Smart KVM Extender Settings mode

Enter the Settings mode to:

- Change the hotkey
- Change the Timeout period
- Enable/disable lock control
- Make advanced adjustments
- View settings

To enter the Settings mode:

Press **Shift** then, **F2**. Release **Shift** before pressing **F2**. All 3 keyboard LEDs glow when in the Settings mode.

Changing the hotkey

You can change the hotkey from **Shift** to **Alt** or **Ctrl**. Once changed, all references in this Guide to **Shift** now refer to the new hotkey.

To change the hotkey in the Settings mode:

To	Type the letters
Alt	HA
Ctrl	HC
Shift	HS

Changing the Timeout period

To change the Timeout period in the Settings mode:

Press **T** followed by a 2-digit time period of between 01-99 seconds. The 3 keyboard LEDs blink and the new setting is now functional.

Enabling/disabling lock control

By default both users can lock control. You can disable the lock control function in the Settings mode.

To disable lock control type **DL**.

To enable lock control type **EL**.

Making advanced adjustments

The Smart KVM Extender operates with:

- Windows, Linux, Novell or UNIX systems
- 2 or 3 or 5 button PS/2 mouse, Intellimouse or Wheel mouse

When connected and switched on as set out above, the Smart KVM Extender automatically operates with the computer and mouse types connected to it.

Replacing a computer

When a computer is replaced with a different computer type while the Smart KVM Extender is in use, we recommend turning the new computer off before connecting it to the Smart KVM Extender.

When turning the computers off is inconvenient, do the following:

In the Settings mode adjust the Smart KVM Extender keyboard and mouse modes to be compatible with the new computer. See the tables below.

Keyboard settings when replacing a computer

For	Type the letters
PC (Windows, Linux, Novell)	PC
UNIX console mode	UC
UNIX graphics mode	UG

Set the keyboard mode setting to:

- **PC** when operating Intel based computers.
- **UC** when operating UNIX computers in console mode.
- **UG** when operating UNIX computers in graphics mode.

Mouse driver settings when replacing a computer

For	Type the letters
Wheel mouse or Intellimouse	IN
2 or 3 button mouse	PS
5-button mouse	EP

Set the mouse setting to **IN** when the computer has an operating system that supports Wheel mouse functionality: (Windows 98 and Linux*).

Set the mouse setting to **PS** when the computer has an operating system that does not support Wheel mouse functionality: (Windows 95, NT4, DOS, Linux*, UNIX and Novell).

*Depending on the version.

Set the mouse setting to **EP** when the computer has an operating system that supports Explorer mouse functionality: (Windows – ME, 2000, and XP).

Replacing a mouse type

When a mouse is replaced with a different mouse type (not necessarily a different mouse) while the Smart KVM Extender is in use, press and hold the Select button for more than 5 seconds. Release the Select button after your monitor blinks once.

Viewing the settings

View the settings and firmware revision in any text editor.

To view the settings:

1. Before entering to the Settings mode switch the keyboard layout to English.
2. Open any text editor, e.g. Notepad.
3. Press **Shift**, followed by **F2** to enter the Settings mode.
4. Press **F**. The settings appear in the text editor.

Exiting the Settings mode

To save changes and exit the Settings mode:

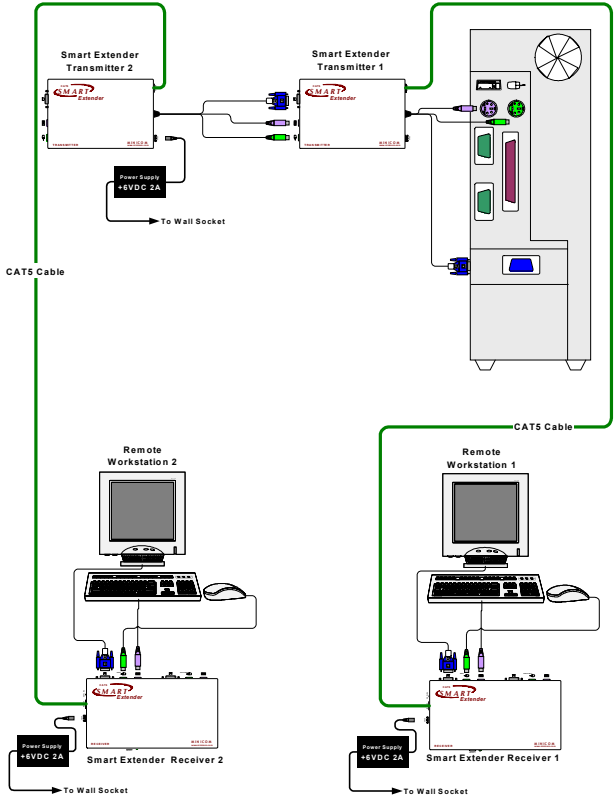
Press **Esc**.

A summary of the Settings mode operations

Operation	Press
Enter Settings mode	Shift, F2
Exit and save changes	Esc
Change Hotkey to Alt	HA
Change Hotkey to Ctrl	HC
Change Hotkey to Shift	HS
Change the Timeout period	T, xx (01-99)
Enabling lock control	EL
Disabling lock control	DL
Keyboard setting – PC	PC
Keyboard setting – UNIX console mode	UC
Keyboard setting – graphics mode	UG
Mouse setting - Wheel mouse or Intellimouse	IN
Mouse setting – 2/3-button mouse	PS
Mouse setting – 5-button mouse	EP
View Settings	F

14. Cascading Smart Extenders

Cascade two or more Smart Extenders to get more than one remote workstation working from one computer. One possible configuration is shown on the diagram below.



Transmitter Power adapter

To ensure mouse and keyboard functionality connect an external power supply +6VDC 2A to the second Smart Extender Transmitter unit – see the figure above.

Switching on

Switch the system on in the following order:

1. The second Smart Extender Transmitter unit
2. The rest of the system, including the shared computer.

15. Technical specifications

System	
System cable	**CAT5 FTP cable 2x4x24 AWG Solid Wire**
Maximum distance	**110m/360ft**
Mouse support:	**2 or 3 or 5 button PS/2, Wheelmouse**
Operating systems	**DOS, Windows (3x, 9x, 2000, NT,ME, XP), Novell, Linux, UNIX, HP UNIX, QNX, SGI, FreeBSD, BeOS, Open VMS**
Screen resolution	**Up to 1600X1200 @ 75Hz (depends on cable length)**
Operating temperature	**0°C to 50°C**
Storage temperature	**-40°C to 70°C**

	Transmitter	Receiver
Cables	**Built-in KVM**	**3 in 1 CPU**
Connectors	**VGA – HDD15M** **Keyboard – MiniDin6M** **Mouse – MiniDin6M** **System – RJ45**	**VGA – HDD15F** **Keyboard – MiniDin6F** **Mouse – MiniDin6F** **System – RJ45**
Dimensions	**85 x 113 x 25mm/** **0.28 x 0.37 x 0.08ft**	**85 x 49 x 25mm/** **0.28 x 0.49 x 0.08ft**
Power supply	**From Keyboard**	**External power adapter 6VDC 2A**
Weight	**380g**	**380g**
Shipping weight	**1.70 Kg**	